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ABSTRACT

This paper suggests that teachers concentrate on the ideational and structural properties of text rather than on information acquired from readability formulas when selecting and using texts. Emphasis is given to the importance of context in the analysis of text, and a framework is suggested for examining the text considering the functions texts are intended to serve in the classroom. Suggestions to teachers for examining the ideas, the relationships between ideas, and the structural qualities of texts include: (1) ideas might be examined by first isolating the essential understanding students are expected to derive from a text, then examining the extent and nature of support for these understandings provided within the idea units of a text: (2) relationships between ideas might be evaluated in terms of the probability with which the relationships are readily understood, implying that factors such as context, background knowledge, and reader purpose should be considered: and (3) the structural qualitites of expository text might be examined in terms of the ease with which ideas can be mapped hierarchically and relationally. Suggestions are also given for assessing the structural qualities of narrative. (MKM)

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Reading Education Report No. 17

SOME CLASSROOM APPLICATIONS OF TEXT ANALYSIS: TOWARD IMPROVING TEXT SELECTION AND USE

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Special Note

Throughout the present paper, the examples which were included were taken from a variety of sources, including several major basal series and content area textbooks. It should be noted that the selection of one publisher's material over another's was quite arbitrary, and similar comments could be generated for most, if not all, other series or textbooks.

Classroom Applications of Text Analysis: Toward Improving Text Selection and Use

The recent plethora of research and interest in the examination of text features has generated a number of new frameworks for assessing texts. These frameworks provide the researcher, disenchanted with sentence-level analysis, new research directions and incentives, and offer the reading educator, previously limited to the use of readability formulae, the promise of a better appreciation of what may contribute to or detract from the comprehensibility of text. Toward providing the educator an introduction to these advances, the present paper discusses some of the perspectives provided by these frameworks. Specifically, the paper addresses the following: (a) the issue of examining the contextual aspects of text, and (b) the use of several frameworks and suggestions for examining the ideas and relationships represented within a text.

Examining the Context of Text

Central to an understanding of the characteristics of text is an appreciation of what a text is. Among many scholars the term text has recently come to refer to a unified whole. It can be anything from a riddle to a road sign, from a newspaper article to a whole book. To define a text as a unified whole, however, requires an appreciation of the notion that a text represents language in use. That is, apart from the ideas and relationships which are represented somewhat explicitly within a text, an important aspect of text is the context within which a text functions as a unified whole.

Describing a text's context requires an analysis of the extralinguistic contextual variables involved in the production and comprehension of text. In producing a text, an author goes beyond selecting any assortment of words; rather, an author predicts the reader's context and searches for the words which will create appropriate connotations and denotations in the mind of the reader. In other words, what can be identified as the ideas and relationships between ideas represented within a text are constrained by an author's perception of an audience, an author's perception of the reader's background of experience, an author's perceived goals for a text, and an author's ability to appreciate the effect of a text upon an audience. Likewise, in comprehending a text, a number of factors influence the extent to which a reader's interpretation will vary from an author's intended message. For example, a reader's knowledge, purpose, interest, and attention, as well as the physical and sociocultural conditions of the reading situation, may constrain comprehension strategies in such a way as to influence or even abort the construction of meaning. The point is that external factors influence both the linguistic choices of writers and the possible interpretations developed by readers. It follows that the relationship between author and reader should be viewed as integral to an examination of the context of text; i.e., a consideration of the match or mismatch between author and reader should be regarded a requisite to assessing the extent to which a text fits a particular audience. To this end we propose that an examination of text should include the following complementary analyses: (a) an analysis of the purposes a text is intended to serve and (b) an examination of the shared experience of author and reader.

Purposes and Shared Experiences of Author and Reader

Examining the purposes and shared experiences of readers and authors involves two tasks. The first task is to determine whether differences exist between the functions a text might serve and the purposes for which a text is read. The second task is to compare the knowledge required to understand a text with the knowledge of the reader with whom it is to be used.

As an illustration of differences existing between the functions a text might serve and those for which it is read, consider the following: Compare, for the sake of example, the obvious differences between the understandings a reader might be expected to glean from Stephen Crane's The Red Badge of Courage (1966), which uses the U. S. Civil War as background, and a chapter in a history textbook which uses the U. S. Civil War as topic. In the former, it is the themes evoked by the experiences of a young man participating in war which are likely to be of direct relevance and importance to the reader. In the latter, it is the facts and concepts that describe the Civil War which are likely to be of direct relevance and importance to the reader. In other words, Crane's text serves primarily a literary function; the history chapter serves primarily an informative function. For Crane's treatment, it might be reasonable to expect a reader to glean an appreciation of the mood of the experience of war; for the textbook chapter, it might be reasonable to expect the reader to develop an appreciation of the causes, progress, and consequences of the Civil War. Obviously, if Crane's novel were not written with the expectation that the reader would be able to identify key events of the Civil War, then it would not seem reasonable to read the text for this purpose.

Likewise, if the history chapter were not written for purposes of detailing the mood of the time, maybe it should not or could not be expected to be read for this purpose.

Unfortunately, in our reviews of textbook materials, we have encountered numerous examples where text intended for one purpose is forced to fit other purposes. It is as if some publishers of textbooks often force selections to fit questions. With little regard for the integrity of a selection, some publishers seem to naively presuppose text well-written for one purpose will be appropriate and well-written for other purposes. For example, in a certain biology textbook, which will go unnamed, a publisher uses a text describing the changing color of leaves to try to explain the physical process of actual change. Unfortunately, the latter is not addressed in the text, and only with considerable "manipulation" or teacher support could the text be expected to extend to this purpose. In the elementary classroom, simple basal narratives are often subtly sabotaged by an excessive use of trivial questioning. In this regard, parents and teachers should be careful that the purpose for which a story is usually read (e.g., enjoyment) is not defeated by poorly fitting questions (e.g., detail questions dealing with trivial information). In our reviews of basal stories, we have encountered numerous examples where stories are manipulated for so-called pedagogical purposes. We are concerned that children may come to believe that the purpose of reading is to be able to answer such questions. We are especially concerned about independent reading of supplementary materials where the children may first look at the questions to be answered and then go on a search to find the

answers. Such a tactic is completely contrary to the "text as a unified whole" concept that we discussed earlier.

The point is there are many situations when a text written for certain purposes cannot and should not be used for other purposes; the teacher's task is to identify as well as avoid these incidences when the text might be so misused.

The second facet of an examination of the purposes and shared experiences of author and reader involves comparing the reader's and author's background of experience. This requires recognizing the differences which exist between the knowledge of the reader and the knowledge which the author assumes the reader possesses. For example, consider the knowledge required to understand the following segment of text based upon an article from a New Zealand publication:

> Our education policy is "back to basics." We will abolish color rods and replace them with old sums and take aways. These have surely stood the test of time. We will back this up with the replacement of compulsory PT for playlunch. Clean sandshoes and uniforms will be our standard.[1]

Or consider the following segment of text submitted for inclusion in a basal reader:

> "The Train Rider" (see Footnote 1)
>
> Carl and Cindy look.
> They listen.
> Then they see the train.
> It has many cars.
> The train stops.
> Carl and Cindy get on the train.
> Their mother gets on too.

It does not take too much effort to identify the readers for whom these texts might be inappropriate or void of some meaning The first passage is written for a New Zealand audience, and a reader unfamiliar with the "tongue-in-cheek" writings of Grant and some of the meanings of certain statements would not appreciate the full impact of humor intended. For example, only a reader familiar with the popular sentiments of New Zealanders toward education would recognize the thematic ties which exist between, color rods, sums and take-aways, compulsory PT, and clean sandshoes.

In the second passage, written for a wide audience of school children, the author obviously assumes his or her readers have a certain amount of knowledge regarding the railways--notably, that trains are made up of "cars" and stop at stations. Without these key facts, we would posit that a reader will likely develop an incomplete or unrealistic interpretation. Again our point is that prior to assuming the worth of a text, the shared knowledge between reader and author should be considered. Without this shared knowledge, much of the richness and even simply the cohesiveness of a reader's interpretation will be lacking.

To summarize, defining the context of text (which seems integral to any examination of text) requires extralinguistic analyses. Minimally, such analyses should include an examination of the legitimate purposes for which a text can be used and the audience for which the text is written.

Ideas, Relationships between Ideas, and Structural Considerations

An important complement to examining the context of text is a description of the ideas, the relations between ideas, and the structural properties

within text. Over the past decade numerous systems have been offered for formally representing the information within a text. In this regard, the systems of Dawes (1966), Frederiksen (1975), Grimes (1972), Halliday and Hasan (1976), Kintsch (1974), Meyer (1975a, 1975b), Rumelhart (1975), and Thorndyke (1977) have been seminal. For the purposes of the present paper, several key notions based upon a composite of this work are presented. Although more formal text analysis procedures will be cited, our intent is to offer simplified procedures by which teachers can select and use texts. We begin with suggestions for examining the ideas in a text, move to a discussion of the relation between the ideas of a text, and conclude with a discussion of the structural qualities of text.

Examining Ideas within a Text

Examining the ideas within a text has been central to various methods of text analysis--in particular the systems of Frederiksen (1975), Kintsch, (1974), and Meyer (1977). To illustrate how the ideas within a text might be formally described, note the following text segment taken from a biology text and an accompanying analysis of the ideas expressed in the text:

"The Garbage Collectors of the Sea" (see Footnote 1)

> The garbage collectors of the sea are the decomposers. Day and night, ocean plants and animals that die, and the body wastes of living animals, slowly drift down to the sea floor. There is a steady rain of such material that builds up on the sea bottom. This is especially true on the continental shelves, where life is rich. It is less true in the desert regions of the deep ocean.
>
> As on the land, different kinds of bacteria also live in the sea. They attack the remains of dead plant and animal tissue and

break it down into nutrients. These nutrients are then taken up by plant and animal plankton alike. Among such nutrients are nitrate, phosphate, manganese, silica, and calcium.

As the nutrients are released, they spread around in the water. But they tend to stay near the bottom until some motion of the water stirs them. As you saw earlier, during those seasons when the water is churned up and mixed, the nutrients are brought up to the surface. They may also be brought up by the upwelling action of deep currents. This is especially so along the west coasts of Africa, South America, and North America. Wherever there are regions of upwelling of nutrients, there are rich "fields" of plant plankton, usually during all seasons of the year.

So nutrients are kept circulating endlessly in the oceans, and are used over and over again by plant plankton and whales alike. When a plant or animal breaks down the sugar-fuel it needs for growth, the energy stored by the sugar is used. Some of it goes into building new body parts and some of it is lost as heat. This is not true of nutrients.

Nutrients are not "used up" in that way. For a while, oxygen, carbon, calcium, and other nutrients that a plant or animal takes in become part of the plant or animal. But when the animal or plant dies, and when it gives off body wastes, the nutrients are returned to the environment and can be used again and again.

A formal representation of this text might entail an analysis similar to that presented in Figure 1.[2]

Insert Figure 1 about here

The system represented in Figure 1 is based on the concept of an idea unit consisting of arguments and relations. In 1.0 of Figure 1, "garbage collectors," "sea," and "decomposers" are arguments, while ISA and QUALIFY

are relations. The relations tie the arguments together into a single idea unit. Basically, there are three classes of relations: predication, modification, and connection. Predication is usually defined by a verb in the idea unit: BUILDS UP in 3.0 presupposes, first, the arguments of that which is built up (the remains of plants and animals and body wastes) and, second, a complement which describes what is built up or where something is built up ("on the sea floor" in the present example). Modification is usually realized by words serving an adjectival or adverbial function: QUALITY, "rich" in 5.0 relates the arguments "life" and "rich," with "rich" modifying "life." Connection is usually realized by connectives coordinating arguments within an idea unit or between idea units: LOC (location): ON in 5.0 relates the proposition "life is rich" to the proposition "the continental shelves" via the connective "on."

Teachers would be ill-advised to use analysis methods which are as formal, detailed, or decontextualized as the above-mentioned proposal. Apart from the fact that they would be too time-consuming and cumbersome, such systems disregard the specific uses to which a teacher or student might put a text. In this regard, a more viable approach would be a simplified form of ideational analysis whereby teachers assess the match between the text and key understandings for which a text is being read. For text with expository tendencies, this might involve assessing the extent to which the idea units within a text support certain informational units. For texts with a more poetic or aesthetic intent, this might entail an examination of the support given setting and theme.

For purposes of illustration, an ideational analysis of the "Garbage Collectors" passage could involve an examination of text similar to that which is depicted in Figure 2. As detailed in Figure 2, consider the support given the concept of decomposition. Units within the text which serve to define, clarify, or modify are circled and their clarity represented by complete or broken lines.

Insert Figure 2 about here

For example, day and night and steady rain provide ample support for the notion that decomposition is a never-ending process. The locational reference to continental shelves is marked as vague, given the failure of the text to adequately describe or define the continental shelf--a term likely to be unfamiliar to most readers. Also problematic are those unelaborated aspects of the text which intend to specify what decomposers are and how decomposition takes place.

Essentially, our point is that if the purposes for which a text is examined are eventually instructional, then, as a first step, a subjective analysis of text clarity might be initiated informally by the teacher. There are no formal analyses or even much research to date on what constitutes text clarity. The teacher will have to rely on intuition. Intuitive, subjective judgments should be based on the teacher's knowledge of the subject matter in combination with the teacher's knowledge of the common experiences of the children. Thus, our evaluation of the reference to continental shelves as vague is based on the fact that the concept of "continental shelf" had not

been discussed previously in the text and on our subjective hunch that the students for whom this biology text was written would not have been previously introduced to the concept.

Examining Relationships between Ideas

It should be noted that, in an analysis of a text, determining the idea units is only part of the picture. Consider those aspects of text referred to as cohesive ties (Halliday & Hasan, 1976). These aspects of text include features such as pronominalization--the use of he, her, this, those, etc.--and conjunctions--the use of and, but, yet, or, and also therefore, however, for example, etc. (Halliday and Hasan's cohesive system also includes the categories of substitution, ellipsis, and lexical cohesion. These categories are omitted from the present discussion because they represent phenomena not as readily identifiable in text as are reference and conjunction.) The referential and conjunctive features of text are termed cohesive because they relate or tie information across a text or with prior knowledge. For example, in "Garbage Collectors of the Sea" the pronoun they in they attack the remains is related to and resolved by the concept of bacteria introduced in the previous sentence. Also, so in so nutrients are kept circulating endlessly related two idea units as blocks of information. It should be noted that most of these ties cross sentence boundaries.

The worth of a cohesive analysis comes in determining whether or not the use made of certain pronouns and conjunctions is indiscriminate and likely to detract from the acquisition of an integrated interpretation of text. Consider the former--namely, the indiscriminate use of ties such as

it, then, this, there, as they frequently appear in basal texts. For example, note the author's lack of clear referents for pronouns in the following selection written for a basal reader:

"Be My Friend"

Rabbit was not happy.
He wanted a friend.
"Which animal will be my friend?" he asked.
Rabbit saw an animal in a tree.
It looked like fuzz.

If you reread the last two sentences, you can see that it lacks a clear referent. The pronoun has two possible referents--either the animal may look like fuzz or the tree may look like fuzz. Similarly, consider the author's use of this in the following text:

> At the beginning of the school year, be sure to collect your registration materials, pay your fees, and see an advisor. If the library fees are not paid you will be unable to register. Failure to do this will require applying for readmission.

In this example, the word this is used in a vague or imprecise way. This may refer either to the information presented in sentences 1 and 2, or it may refer only to sentence 2.

Now consider the following sentences based on the text "Garbage Collectors of the Sea":

> So nutrients are kept circulating in the ocean.
> They are used over and over again by plant plankton and whales alike.

> So nutrients are kept circulating in the ocean while they are used over and over again by plant plankton and whales alike.

So nutrients are kept circulating in the ocean and used over and over by plant plankton and whales alike.

This example is especially interesting since a case can be made for the use of three discrete methods for relating the two idea units. A case can be made for: (a) the inclusion of and (Example 3), (b) the omission of the connector altogether (Example 1) on the grounds that the relationship has already been established by the reader's interpretation of prior text, or (c) establishing an unambiguous relationship with the use of while (Example 2). These positions serve to point out some of the problems involved in examining cohesive ties or connectors. It is apparent that the absence of a tie or connector can be as cohesive as the presence of one. The fact is that the presence of a tie does not necessarily establish coherence. That is, there is not necessarily a high correlation between lots of ties and lots of coherence. What this implies for an examination of text is, first, the identification of presupposed idea units, and second, an intuitive evaluation of the extent to which the relationship between ideas is clear.

To reiterate, then, the evaluation of ties and connectors--namely, the presence or absence of clear referents and the conjoining or separation of sentences--is important but cannot be made in isolation. Ties and connectors interact with various other factors, including world knowledge, ideational units, and readers' expectations relative to structure. The important question to ask is, "Does it work?" To determine whether or not a tie works, we suggest it would be reasonable for teachers to examine those ideas within a text which they deem important and then determine the extent to which the

ties used render the text obscure, ambiguous, unduly implicit, or just generally indeterminable. A measure of indeterminacy might be the probability with which a reader will generate a fragmented interpretation of the text or be unable to resolve presupposing items of text. In some situations this will vary with the complexity of the ideas themselves or the distance between connected ideas. The point is, if a teacher determines that a tie does not work, then the teacher has an indication of a possible point of confusion on the part of his or her students.

Examining Structural Qualities

The determination of idea units and ties extends our picture of text, but it does not address how well ideas are structurally related across an entire passage. Consider the structural qualities of expository text and stories.

Structural analyses of expository text. The text analysis systems proposed by Meyer (1975a, 1975b) and Anderson (1978) are designed to depict the structural alignment of idea units. These systems attempt to show how an author has organized ideas by means of a tree diagram or flow chart. A general structural representation of "Garbage Collectors of the Sea" based on Meyer's text analysis system is presented in Figure 3.

Insert Figure 3 about here

Key arguments and/or idea units appear toward the left margin. Idea units appearing to the right of these key units and connected by a diagonal line are supportive of the key idea unit; for example, Idea Unit 5 is subordinate

to Idea Unit 1. Idea units aligned vertically are of equal importance. For example, Idea Unit 8 is equal in importance to Idea Unit 1 (see Footnote 2). To describe the relation of an idea unit to a dominant argument or idea unit, Meyer's structural analysis uses a series of relations.[3] For example, Idea Unit 2 has the relation label attribution. This means that the block of information, propositions 2 through 7, are related via an attributive, descriptive relation to Idea Unit 1.

Now consider the mapped representation of the "Garbage Collectors of the Sea" in Figure 4.

Insert Figure 4 about here

The mapping technique incorporates the visual-spatial conventions for diagramming ideas and the relations between ideas. In mapping, individual idea units are diagrammed as blocks of information via seven fundamental relationships: concept and example, concept and properties, concept and definition, temporal succession, cause and effect, conditions and comparison. An important quality of the map is that the shape of the map represents the organizational pattern of ideas within a text. For example, in "Garbage Collectors of the Sea," a time-based structure characterizes the first block of information. This is shown by a series of boxes connected by arrows depicting the following section of text:

> The remains of plants and animals, and the body wastes build up on the sea floor. THEN they are attacked by bacteria. . . . THEN the nutrients . . .

What utility do these types of text examinations have for a teacher? Meyer (1977) suggests that a structural examination of text affords an appreciation of the extent to which key ideas are supported by a well-structured text. She suggests, for example, that writers would do well to keep their text tightly structured and place information "to be remembered" in superordinate positions. Toward assessing text in these terms, both Meyer's system and Anderson's mapping seem to have the classroom in mind. Their methods for the visual representation of a text provide teachers examples of systems which can be easily simplified and which go a step beyond outlining. Unlike an outline, these procedures afford an appreciation of the relationships between ideas and sets of ideas.

But how does one assess whether the structural characteristics of text will contribute to or detract from meaning? The task of formulating a map, tree diagram, or flowchart of a text has the potential to yield several worthwhile indices. For example, assuming a teacher has isolated the key ideas for which a text is to be read, the salience of these ideas will likely be related to their level of subordination and "fit" to a structural alignment. In situations where ideas are difficult to structurally align and the relationships between ideas are complex, it seems likely these ideas will be less salient. In all, we would suggest that the extent to which a teacher has difficulty outlining and describing the relationships between idea units may be an index of the difficulty the students will have in dealing with the text for these purposes. To illustrate, notice that the tie between the two blocks of information in "Garbage Collectors of the Sea"

is quite difficult to detail (as indicated on the Meyer analysis by the "?" in Figure 3). The passage seems to make a shift in focus or topic without an adequate transition or preparation for the shift. We would suspect that the problems incurred in mapping these details are similar to problems a reader might have with this same text read for certain purposes.

Although we are hopeful that these structural representation systems will someday be made easy to use and be proven to make quite general predictions about passage difficulty, we hope that the teacher can take more immediate action to evaluate the structural integrity of expository texts used in classrooms. The teacher should examine the text for instances of unmarked topic shifts and for places where important information is rhetorically subordinated or where unimportant information is placed in superordinate position. Care must be employed, however, in evaluating expository structure, for authors may use various kinds of expository structures and rhetorical devices. Some unimportant information, e.g., an interesting anecdote, may precede the main points to be made. Such information is only a problem for children to the extent that they perceive it as being important and understand the rest of the text in light of the initial information. But we have no solid evidence either way. The teacher will have to determine whether an individual student gets off on the wrong track and will have to help the student to recognize that some subparts of a text are interesting digressions. In all of what we say in this paper, we urge the teacher to make a subjective distinction between what may be difficult and what may be deleterious, between challenging and problematic.

Structural analyses of stories. Stories, like expository text, can be subjected to structural analyses. But unlike those for expository text, the intent of most formal structural story analyses is to define the extent to which a story fits a prototypical structure or "grammar"--a structure purported to be based largely on the cultural expectations of individuals (Mandler & Johnson, 1977; Rumelhart, 1975; Stein & Glenn, 1978; Thorndyke, 1977). Typically, a structural account of a story involves defining the relations among idea units in a story in terms of STORY $\Longrightarrow$ SETTING + THEME + PLOT + RESOLUTION. Also, categories such as SETTING can be further defined in terms of CHARACTERS, TIME, and LOCATION. The end result is a tree structure which depicts a hierarchy of categories and subcategories. At the lowest level of the hierarchy are the subplots--likely to be episodes embedded within episodes.

Research on these grammars suggests--at least for simple stories--that students internalize these grammars, expect them, and tend to recall information from higher category levels. For example, the structural organization of narratives has been shown to influence what information is recalled or summarized (Kintsch & van Dijk, 1978; Rumelhart, 1977; Thorndyke, 1976, 1977). Stories whose structure violates the prototypical plot structure have been shown to be more difficult to comprehend than stories whose structure is congenial with the prototypical structure. For example, story recall was debilitated by variations from good story form, especially movement of the theme or goal statement to the end of the story (Kintsch, 1977; Mandler & Johnson, 1977; Stein & Nezworsky, 1978). Also, the determination of knowledge

of a character's goals and plans has been shown to be central to story understanding. Thorndyke (1977), for example, has shown that the deletion of a story character's goal from an otherwise coherent story can reduce the comprehensibility of text. It seems, then, that if simple stories do not fit these expectations, a reader's ability to follow a story line may be hampered.

To analyze stories, then, teachers do not need sophisticated analysis systems. All that is needed is a general framework for analyzing a story--one that follows a basic story structure. Such a framework, mentioned earlier, consists of the alignment of story categories and subcategories,[4] shown in Figure 5.

Insert Figure 5 about here

With the general framework for analyzing stories given by the categories of STORY, teachers can gain a more sophisticated understanding of the material the students are being asked to read, and thereby gain greater control over a successful interaction between the reader and the story. For example, a general framework for analyzing stories can enable teachers to determine the extent to which a story deviates from the idealized framework (the deviation is not necessarily good or bad). The teacher can then prepare the students for a deviation if it is extreme, allow for the effect of the deviation on comprehension exercises, make the deviation the point of reading the story, or not read the story at all. Teachers might also assess the extent to which characterization, conflict, and plot progress with the

movement of the story. From the teacher's point of view, any extensively negative evaluation of a story's worth may be grounds for not reading the story.

To illustrate, consider the ramifications of these notions for evaluating the following story selections taken from selected basal readers.

Insert Selections 1, 2, and 3 about here

In the first selection, the author presents a minor conflict, but given the sparseness with which the character's motives are treated, the plot seems hardly worth engaging. The second selection includes characterization but no real conflict. Again, there does not seem to be a plot worth sharing. The third selection has a similar problem. In this selection there is a conflict, but the events in the story lack continuity and seem unrealistic. Either there are gaps in the plot or the events are poorly aligned. Across selections, then, it would seem that a lack of characterization, conflict, and continuity contributes to an improbable or awkward plot. As Bruce (1978) suggested in a report entitled What Makes a Good Story?, good stories: (a) display conflicts and continuity and (b) seem "worth it" when they draw upon the reader's beliefs and expectations.

What does this concept of good story form or structure entail for the examination and generation of stories? On the one hand, it can be argued that uniform yardsticks cannot and should not be used to evaluate texts of literary merit. Such yardsticks or frameworks will likely limit variations of aesthetic worth. On the other hand, a general framework used sensibly

for analyzing stories--at least simple stories--can provide teachers more systematic and sophisticated procedures for determining the comprehensibility of texts.

Summary and Implications

One disclaimer needs to be made at this point. That is, we have by no means exhausted the textual features which contribute to the comprehensibility of a text. For example, we have not referenced any kind of syntactic analyses of text. Rather, we have concentrated on ideational and structural properties of text. Furthermore, throughout this paper we have given repeated emphasis to the importance of context. We have suggested that any examination of text features should consider text as language in use. Specifically, our concern has been with the context of text defined by the classroom. To this end, we suggested a framework for examining text in context which involved a consideration of the functions texts are intended to serve in the classroom as well as the purposes and shared experiences of authors and readers.

Within this framework, we made various suggestions to teachers for examining the ideas, the relationships between ideas, and the structural qualities of text. They include the following suggestions:

1. Ideas might be examined by first isolating the essential understandings students are expected to derive from a text, then examining the extent and nature of support for these understandings provided within the idea units of a text. Where a text has a more poetic or aesthetic intent, this might entail a more thematic analysis of ideas.

2. Relationships between ideas might be evaluated in terms of the probability with which ties are readily understood. A measure of the ambiguity, vagueness, or obscurity of ties and connectors might be the probability with which a reader will generate an inappropriate interpretation for the text. This implies that such factors as context, background knowledge, and reader purpose should be considered when evaluating whether or not a tie works.

3. The structural qualities of expository text might be examined in terms of the ease with which ideas can be mapped hierarchically and relationally. That is, teachers might examine the structural integrity of a text in terms of the extent to which a text and the important ideas therein can be easily fitted to either a flow chart, tree diagram, or even an outline.

4. The structural qualities of a narrative might be assessed in terms of the extent to which stories display conflict, incorporate reasonable characterization, and develop a worthwhile plot. It is as if a story should be examined against the reader's expectations relative to whether a story is worth reading.

The potential impact of these suggestions depends on teachers, teacher educators, and publishers recognizing new frameworks for assessing text. In this regard, we would argue that teachers, teacher educators, and publishers have a responsibility to put aside uses of formulae which require sentence length and wordiness to override other text quality considerations. In all, we contend that publishers, teachers, and teacher educators need to give more weight to the beauty and complexity of communication in relation to text

selection and use and be less bridled by readability formulae and other restrictive indices. This also implies that new ways of analyzing texts according to cohesive ties or structural "grammars" be looked at for their conceptual content, i.e., for the general claims about comprehensibility that they make. Any attempt to use any of the methods of text analysis we have presented as a serious guide to an absolute ranking and selection of texts would lead to a new round of restrictive indices replete with the same problems as the old ones.

We have used the term "frameworks" for assessing texts. Current theoretical work on text analysis should suggest new frameworks or states of consciousness for teachers, teacher educators, and publishers to assess classroom material. This work should not be viewed as a new, improved method for taking the human element off the hook of pedagogical responsibility.

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Footnotes

[1]Examples used in this paper are taken from among the following sources: Aaron et al., 1978; Clymer et al., 1976a, 1976b; Gallant, 1975; Grant, 1979.

[2]You will note that within this block of information, individual idea units can be several levels removed from the key argument or idea of the block while being immediately subordinate to a key argument or idea unit within the block. Also note that the tie between the two blocks of information is tenuous. (We have identified this by a "?".) In other words, the passage seems to make a shift from decomposers to nutrients without adequate transition or preparation for the shift.

[3]Several broad classes of relation are rather self-explanatory and can be identified, e.g., alternative response, descriptive, collection, and causal.

[4]Emphasis has been given to characterization, development of conflict, and plot continuity. It must be stressed that these three aspects of a potentially engaging story cannot be isolated within a category of the STORY representation. Characterization progresses within the movement of the story. The development of conflict and plot continuity are part of the same story movement. And the categories of STORY are not absolute entities existing separate one from the other (SETTING can be THEME, THEME can be generalized within PLOT, RESOLUTION can be or is a final EPISODE(S)).

Selection 1

David's Wagon

Anne Runck

David had a wagon.
He liked to ride in it.

David liked the wagon better
than anything else he had.

One day David wanted to ride in his wagon.
He went to look for it.

He looked in his room.
But he could not see the wagon.

David looked under his bed.
But he still could not find the wagon.

He looked in the yard.
The wagon was there.
But there was a robin in the wagon.
There was water in the wagon too.
The robin was taking a bath in it.

Selection 2

A Little Patch of Back Yard

Jonathan Mack's father was going to
paint the back steps.
"I'll go with you," Jonathan said.
They walked outside, and Jonathan
sat down in the back yard.

Ants were marching through the grass
in a long parade. Jonathan lay down
on his stomach to watch.
Pill bugs curled up into little balls,
and beetles crawled under little rocks.
One small brown beetle climbed
up a blade of grass. It fell off
and lay on its back
and kicked its legs in the air.
Jonathan turned it over, and
the beetle hurried away.

Down came a robin. The robin tipped
its head this way and that.
"The robin hears a worm in the ground,"
Jonathan said.
"H'm," said his father.
He stopped to look.
The robin tugged and tugged.

Then--there came Mrs. Fell's cat.
The cat came creeping--creeping--slow--slow.
"Watch that cat!" Jonathan's father said.
"I'll watch," said Jonathan.
"I won't let him get in the paint."

SWISH--
A jay darted down over the cat's head.
The cat jumped back. Away it went--
up and over the fence.
"Cat's gone." Jonathan said.
Away went the robin.
And away went the jay.
The little ants were still marching
in their long parade.

Selection 2 Cont'd

"One patch of back yard is like a little world," Jonathan said. "You can see everything here--from an ant parade to a bird digging for its food.

Most everything's looking for something to eat."

He thought of the refrigerator. "I think I'll go inside," he said. "I'll go the front way. I'll be right back."

"H'm," said his father. "Get something for me too."

"Iced tea?" asked Jonathan. "And maybe some chips?"

"That would be good," his father said. "Time for a snack."

Jonathan's father had been working a long time. "Well," he said.

"I've finished my paint job." He sat down beside Jonathan. "Time to rest," he said.

A beetle lit on Mr. Mack's hand, and he watched it a while.

Selection 3

Page 1	Pictures
What Can I Do? "I need to get to the airport fast. What can I do?" said the man.	(Man at an office desk.)
Page 2	
"I can ride this to the airport. But it will not get me to the airport in time. I'll miss the jet. What can I do?"	(Man looks at a bus.)
Page 3	
"Can you get me to the airport in time for the jet?" said the man.	(Taxi driver stops to speak to man.)
Page 4	
"What you need is a helicopter. A helicopter will get you to the airport in time for the jet."	(Man riding in taxi through city.)
Page 5	
"A helicopter! A helicopter will get me to the big airport. With a helicopter ride I'll make the jet," said the man.	
Page 6	
"Come with me. Get in. I'll get you to a helicopter. And the helicopter will get you to the big airport in time for the jet."	

Selection 3 Cont'd

Page 7	Pictures
"What a funny helicopter! It looks old. I need to get to the big airport in time for the jet. Can this funny old helicopter get me to the airport?" said the man.	(Man arrives at helicopter pad.)

Page 8

"This helicopter looks old and it looks funny.
But it can get you to the big airport in time for the jet.
Get in."

Figure Captions

Figure 1. Propositional analysis of "Garbage Collectors of the Sea."

Figure 2. Key concept analysis of decomposition.

Figure 3. A Meyer analysis of the structural properties of "Garbage Collectors of the Sea."

Figure 4. Mapped representation of "Garbage Collectors of the Sea."

Figure 5. Basic story structure.

The garbage collectors of the sea are the decomposers.

1.0 (ISA, garbage collectors (QUALIFY sea), decomposers)

Day and night, ocean plants and animals that die, and the body wastes of living animals, slowly drift to sea floor.

2.0 (DRIFT, (QUALIFY, slowly) A: $\begin{pmatrix}\text{(ocean plants) (QUALIFY, dead)}\\ \text{(animals) (QUALIFY, dead)}\\ \text{(body wastes (QUALIFY, living animals)}\end{pmatrix}$ LOC: TO sea floor, TIME: day and night)

There is a steady rain of such material that builds up on the sea bottom.

3.0 (BUILDSUP, I: rain $\begin{pmatrix}\text{(ISA, rain, material) (REFERENCE, material, 2.0)}\\ \text{(QUALIFY, rain, steady)}\end{pmatrix}$ LOC: ON, sea bottom)

This is especially true on continental shelves, where life is rich.

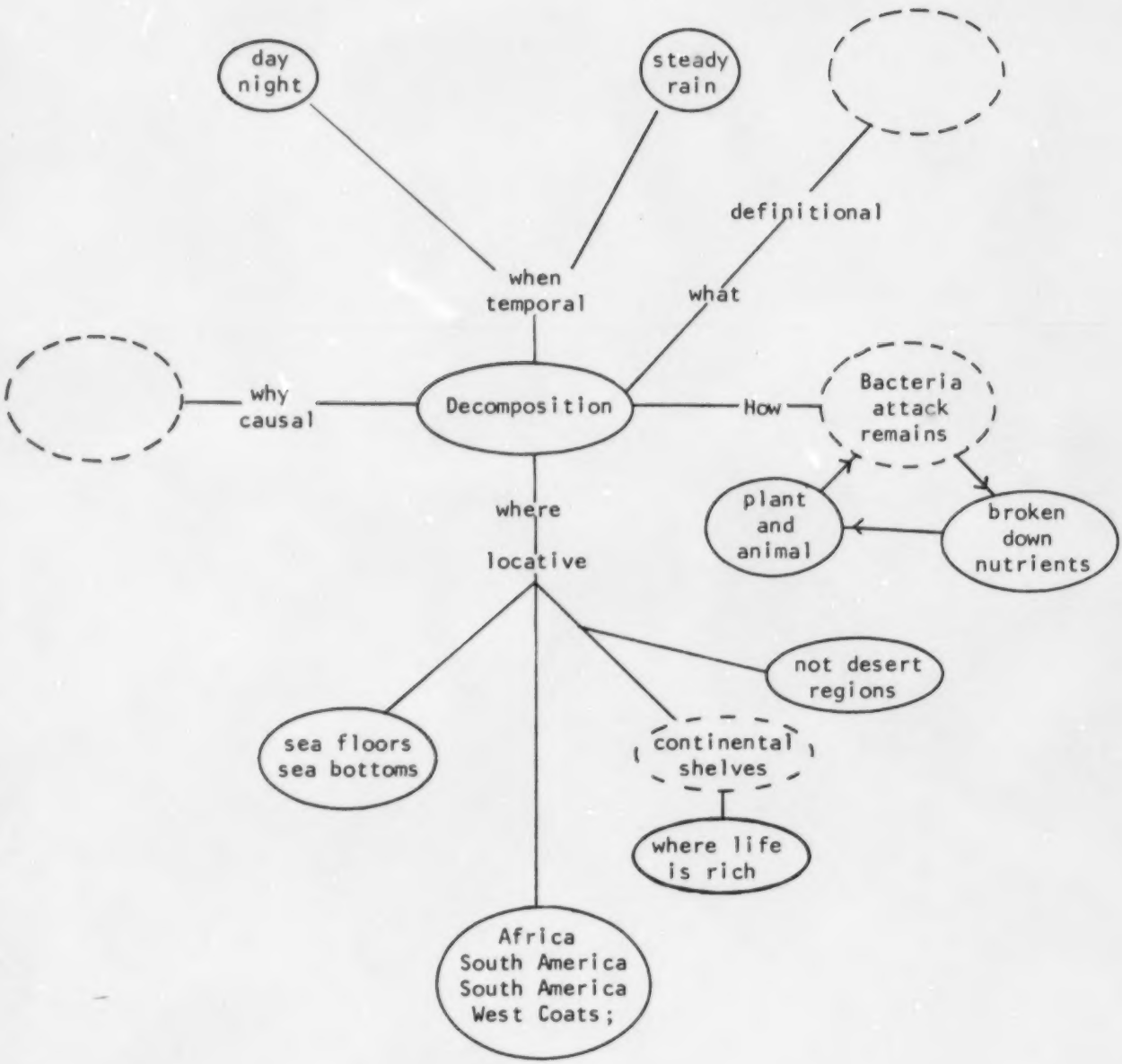
4.0 (BE (QUALITY, true) (QUALIFY, especially), I: THIS(REFERENCE, THIS, 3.0)

5.0 (BE, I: life (QUALITY, rich), LOC: ON, continental shelves)

6.0 (CONJ: WHERE, 4.0, 5.0)

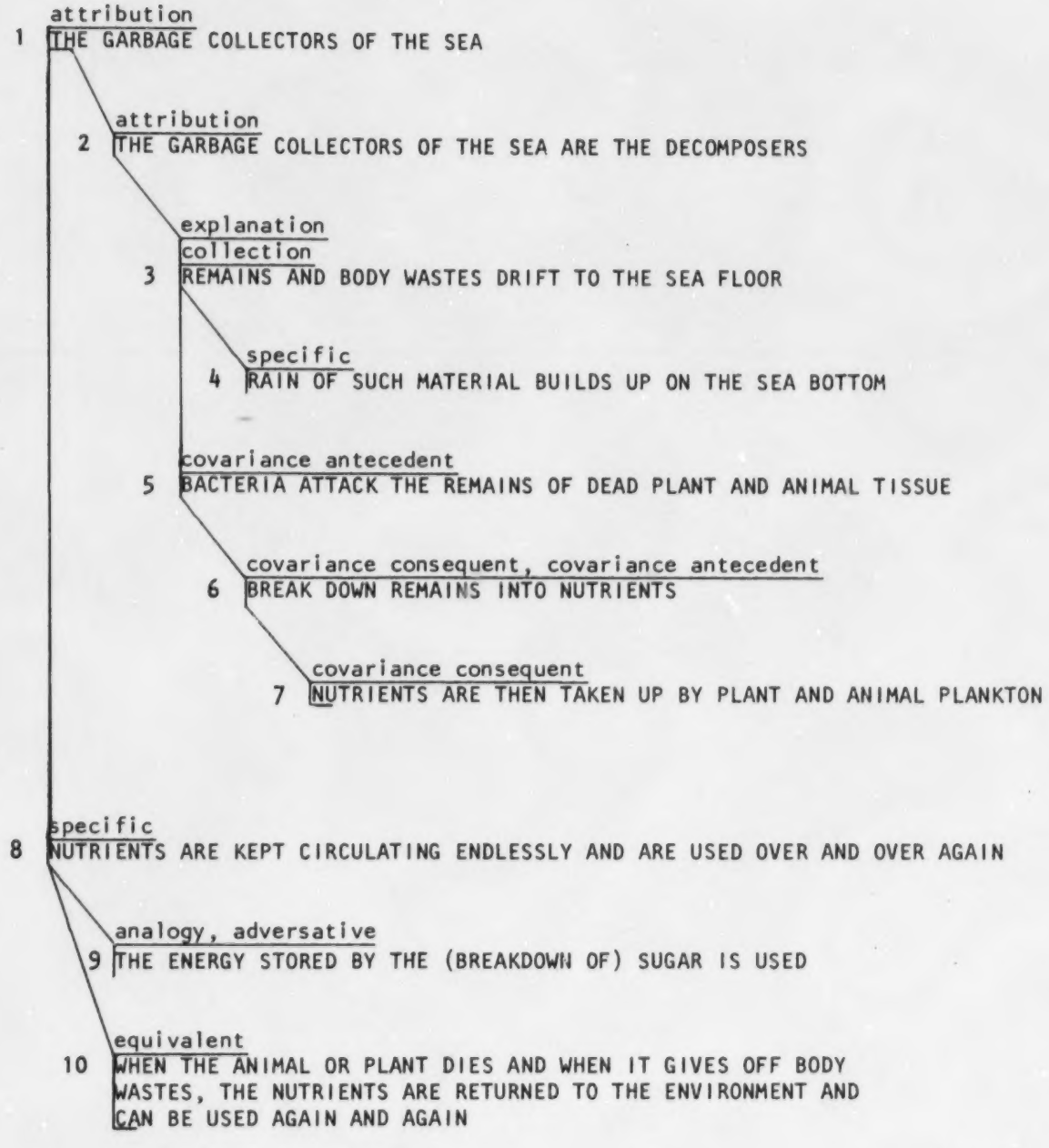
It is less true in the desert regions of the deep ocean.

7.0 (BE (QUALITY, true) (EXTENT, less), I: it (REFERENCE, it 3.0) LOC: IN, desert region (QUALIFY, deep ocean))



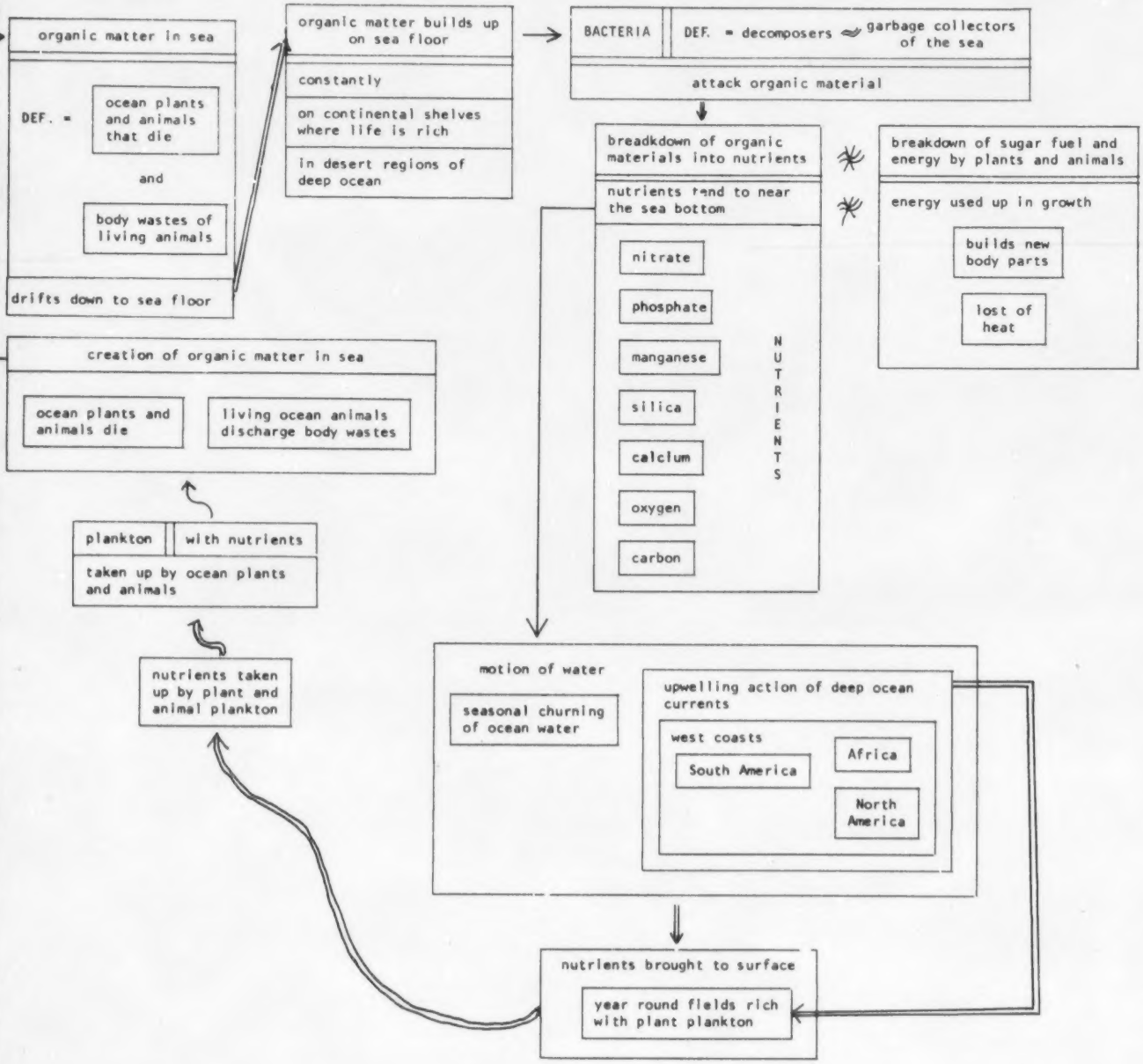
A complete circle suggests definition or clarification.

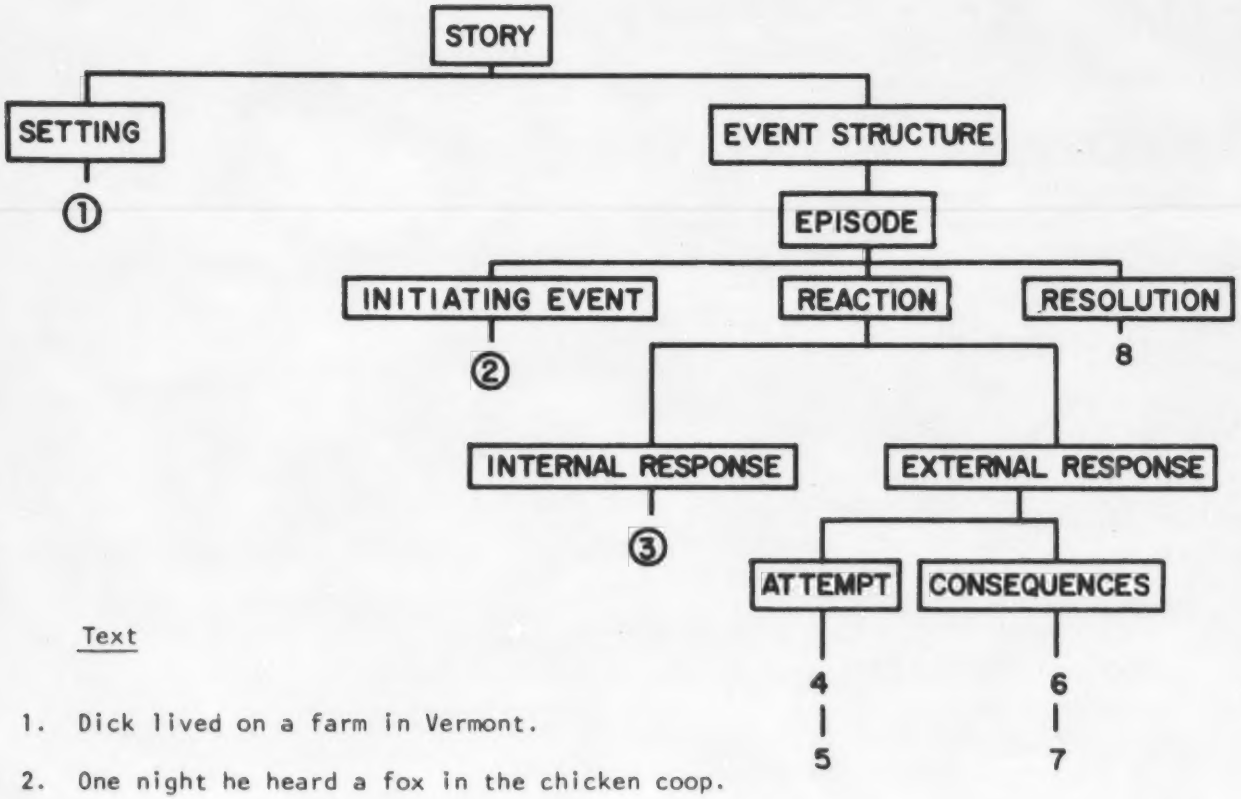
An incomplete circle suggests lack of clarification.


attribution
1 THE GARBAGE COLLECTORS OF THE SEA
attribution
2 THE GARBAGE COLLECTORS OF THE SEA ARE THE DECOMPOSERS
explanation
collection
3 REMAINS AND BODY WASTES DRIFT TO THE SEA FLOOR
specific
4 RAIN OF SUCH MATERIAL BUILDS UP ON THE SEA BOTTOM
covariance antecedent
5 BACTERIA ATTACK THE REMAINS OF DEAD PLANT AND ANIMAL TISSUE
covariance consequent, covariance antecedent
6 BREAK DOWN REMAINS INTO NUTRIENTS
covariance consequent
7 NUTRIENTS ARE THEN TAKEN UP BY PLANT AND ANIMAL PLANKTON
specific
8 NUTRIENTS ARE KEPT CIRCULATING ENDLESSLY AND ARE USED OVER AND OVER AGAIN
analogy, adversative
9 THE ENERGY STORED BY THE (BREAKDOWN OF) SUGAR IS USED
equivalent
10 WHEN THE ANIMAL OR PLANT DIES AND WHEN IT GIVES OFF BODY WASTES, THE NUTRIENTS ARE RETURNED TO THE ENVIRONMENT AND CAN BE USED AGAIN AND AGAIN

NUTRIENTS CIRCULATE ENDLESSLY IN OCEANS

USED OVER AND OVER AGAIN BY PLANT PLANKTON AND WHALES ALIKE





Text

1. Dick lived on a farm in Vermont.
2. One night he heard a fox in the chicken coop.
3. He knew he had to kill it.
4. Dick got his rifle
5. and went to the chicken coop.
6. He suprised the fox with a chicken in its mouth.
7. Dick shot the fox where it stood.
8. Dick buried the fox.

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